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A NOTE ON THE MOULTING OF THE TARANTULA. *EURYPELMA HENTZII*[1]

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A specimen of this spider was brought to me from Texas by a friend on April 15, 1922. It lived in confinement almost a year, and fed upon various insects which were placed in the cage, such as grasshoppers, *Dissosteira carolina*, cabbage butterflies, larvæ of the pipe mud-wasp, *Trypoxylon politum*, larvæ of the green June-beetle and unidentified small moths. It refused, however, to eat adult May-beetles, *Lachnosterna* sp., dung beetles, *Canthon lævis*, centipede, *Scutigera forceps*, bugs belonging to the family Pentatomidæ, and male wasps, *Polistes pallipes*. It is also possible for this species to go for long periods entirely without food. At one time when I was out of the city, a starvation period of two weeks did not seem to harm it.

On one occasion I caught it in the act of eating a fat larva of the June-bug. The spider stood high up on its legs while under its jaws it held the large mass of meat which shortly before had been the larva. Upon repeated proddings, the spider walked slowly away carrying the morsel in its mouth. Finally under provocation the spider let go and then I saw that the food had been reduced to a mushy mass. So thoroughly was it masticated that only by a small portion of the skin was I able to learn its identity. That the tarantula actually chews its prey was demonstrated in the case of the larva of the mud wasp also, but whether the spider actually eats these food masses or only sucks the juices, I do not know.

This spider lived an uneventful life, with the exception of its maneuvers of moulting. This process took place on August

[1]Identified by J. H. Emerton.

13. For two weeks previous to this date, the spider had refused all food. At eight o'clock that morning it seemed fairly lively. At 2:30 p. m. when I again tried to tempt it with food, I found it lying prostrate on the floor of the cage, with the legs stretched out flat. When I attempted to place it in preserving fluid, I found signs of life, and after watching over it for fifteen minutes I found that the spider was actually in the throes of moulting. First the carapace cracked at the sides and along the front, and fell back on the abdomen and lay there inverted. Then by bodily contortions the skin was slowly slipped off the abdomen, or rather the abdomen slowly emerged from the old skin. At this stage all of the legs, as well as the mouth-parts, were still in the old skin, and it was puzzling to me to guess just how they would be shed. Up to this time the legs had been spread in a very natural, free position, but before the abdomen had completely left the old skin I noticed that the spider was gradually raising itself up, up and up, gradually pulling itself out of the old legs, palpus and chelicera coverings. It was a beautiful process to observe. All eight legs were lifted simultaneously, and soon the spider lay helpless on its side, entirely free from the old skin, all limp and clean, and beautiful as new velvet. The entire process of moulting, from the time that the skin began to crack at the shield to the complete extrication, took twenty minutes. Fig. 1 shows the shed skin intact, just as the spider left it. C—carapace, DC—dorsal covering, v. c.—ventral covering, F—one of the fangs removed from the main portion for photographing.

The spider after moulting was very pleasing to the eye. While the carapace had the same grayish-white color, the abdomen had a beautiful covering of silvery brown hair. Some change had occurred in the color of the legs and cheliceræ, for while they had been brown, after moulting they were of a slate gray color, and remained thus without change until the death of the spider, five months later. However, three weeks after moulting it was noticeable that some of the hairs on the front legs had changed to brown. I suppose that the slate color is not a permanent character, but one that changes with age.

Another item of interest was the behavior of the dorsal

groove on the carapace at that time. Under normal conditions, this seems tightly closed, but during moulting it pulsated slowly and constantly, in a way suggestive of air being pumped in. This groove is the point of attachment of the thoracic muscles.

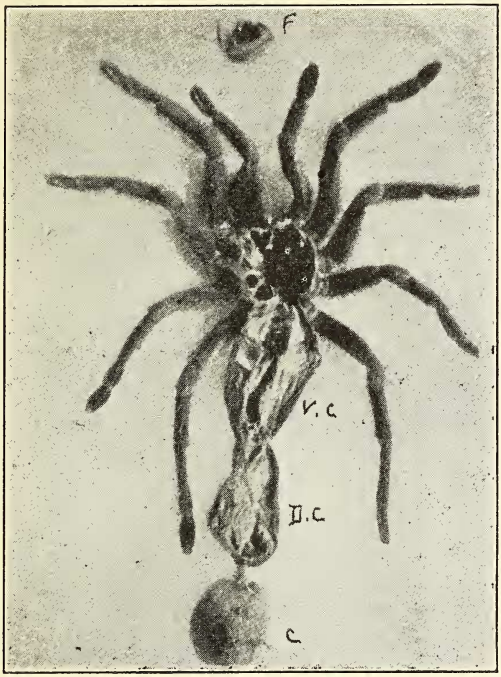

Fig. 1. Moulting Tarantula, *Eurypelma hentzii.*

The animal was probably adult after this moult, and the hazard of moulting had been surmounted.

One other item of interest should be recorded in connection with this narrative. Into this large glass box that served as its house I at one time placed a spider, *Latrodectus mactans.* This creature made a straggly web in one corner, and the tarantula often used it to climb to the top, a distance of fifteen inches. It picked its way carefully and slowly among the strands of web, carefully placing a foot here and lifting one there, as with great dexterity, it lifted its ponderous body, thread by thread, among the apparently insufficient threads.